

REMARKS

Claims 26-28, 31-37, 40-41, 43-44, 59-65, and 67-68 are pending, with claims 26, 43, 63, and 67 in independent form. No claims have been amended, added, or canceled.

Interview Summary

On October 14, 2008, Applicants' representative Marc Wefers conducted a telephone interview with Examiner Rude. Applicants wish to thank Examiner Rude for agreeing to the interview, and for his helpful comments on this case.

During the interview, Applicants' representative and Examiner Rude discussed the independent claims and their relationship to dependent claim 28, in connection with the allegation that claims directed to certain embodiments should be excluded or restricted as constructively non-elected species based on the prosecution history of the application. In particular, Examiner Rude contended that claims 43 and 67 had been amended in the previous office action response (dated March 11, 2008) to be inconsistent with claim 28, which is directed to light source elements having at least one triangular-shaped projection. When Applicants' representative pointed out that the limitations of claim 26 – which was not subject to restriction in the final office action of July 10, 2008 – are present in claim 43, Examiner Rude indicated that claim 26 should have been restricted as well, contending that, by virtue of constructive election during prosecution, claim 26 was also drawn to non-elected species.

Accordingly, Applicants understand that Examiner Rude believes, after further consideration, that the office action response filed on March 11, 2008, was non-compliant. Examiner Rude suggested that upon receiving this response, he would issue a notice of non-compliant amendment with respect to the prior response, providing a further term during which Applicants can respond to the issues raised by the Examiner.

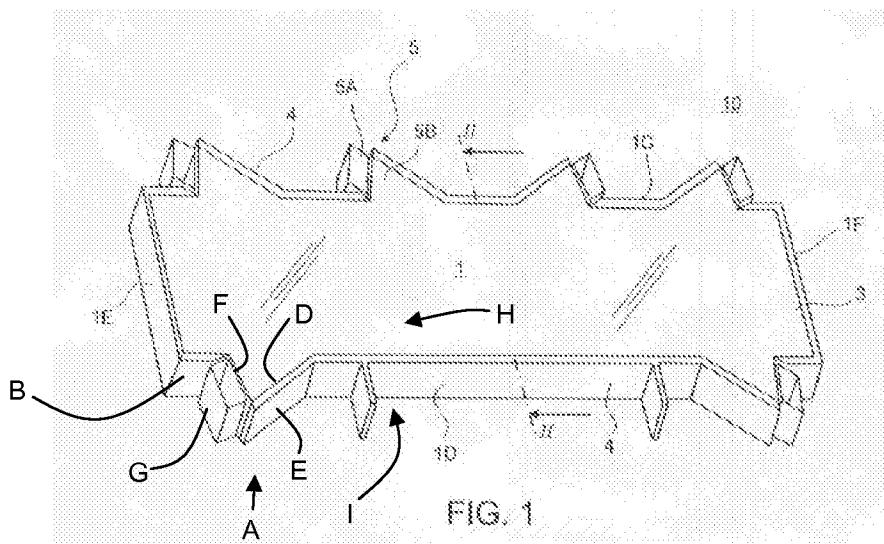
Applicants' representative expressed disagreement with Examiner Rude regarding interpretation of the various independent claims and the relationship of these claims to the triangular projections recited by claim 28. Applicants' representative also noted that claim 63,

which the Examiner would apparently subject to restriction, does not include any of the language which the Examiner alleges conflicts with claim 28. No agreement was reached on these issues.

Applicants' representative and Examiner Rude also discussed the prior art of record in this case, and the relation of this art to the pending claims. No agreement was reached.

Claim Restrictions

Claims 43, 44, 67, and 68 have been withdrawn from consideration in the final office action of July 10, 2008. Further, the Examiner indicated during the telephone interview that he is inclined to restrict out all pending claims from the application. As best Applicants' understand the Examiner's position with regard to the claims, the Examiner believes that previously pending



claim 28 corresponds to the constructively-elected species in this application. The constructively-elected species also corresponds to Applicants' Figure 1, which is reproduced above for reference. Previously pending claim 28 was as follows:

28. The light source element according to claim 27 wherein at least one triangular projection is formed in at least one of at least one longitudinal lateral surface and the opposite surface of the light waveguide, a lateral surface of said projection being

covered by a reflector and another lateral surface of the projection lying free toward the outside and forming the aperture region.

In Figure 1 above, an exemplary triangular projection is labeled "A". Triangular projection A is formed in a longitudinal lateral surface B of the light source element. One lateral surface D of triangular projection A is covered by a reflector E. Another lateral surface F of triangular projection A is free and forms the aperture region of the triangular projection. In the embodiment shown in Figure 1, a light source G is positioned in front of lateral surface F to couple light into the waveguide.

Currently pending claim 28 covers light source elements in which "the at least one projection has a triangular shape." Other limitations of previously pending claim 28 have been included in pending independent claims 26, 43, 63, and 67. Further, in previous claim 28, the at least one triangular projection was "formed in at least one of at least one longitudinal lateral surface and the opposite surface of the light waveguide." The currently pending independent claims each correspond to a projection formed in either a lateral surface of the waveguide or the surface of the waveguide opposite the light exit surface.

Currently pending independent claim 26 was amended in the previous office action response to cover light source elements with "at least one projection formed in at least one lateral surface of the light waveguide, the at least one projection extending over less than an entire length of the at least one lateral surface of the waveguide and comprising two non-lateral surfaces on opposite sides of the projection that are connected by lateral surfaces of the projection." As shown in Figure 1 above, triangular projection A is formed in a lateral surface (e.g., the side surface B) of the waveguide. Projection A extends over less than an entire length of the side surface B of the waveguide. The top surface H of the waveguide and the bottom surface I of the waveguide are two non-lateral surfaces on opposite sides of projection A that are connected by lateral surfaces D and F of the projection.

Claim 26 also recites that "the at least one projection comprises a first lateral surface of the projection that is covered by a reflector, and a second lateral surface of the

projection that is not covered by a reflector and is arranged at an acute angle relative to a principal direction of extent of the light waveguide, forming a light entry face.” As shown in Figure 1 above, the first lateral surface D is covered by reflector E, and the second lateral surface F is not covered by a reflector, and is arranged at an acute angle relative to a principal direction of extend of the waveguide. Lateral surface F forms a light entry face, and light source G is positioned adjacent to surface F to couple light into the waveguide. Based on the foregoing, Applicants respectfully submit that currently pending claim 26 is directed to some of the same embodiments as previously pending claim 28, and should therefore not be restricted from this application.

Currently pending independent claim 43 covers liquid crystal displays with light source elements. The light source elements recited in claim 43 have the same features as in claim 26, including “at least one projection formed in at least one lateral surface of the light waveguide … extending over less than an entire length of the at least one lateral surface of the waveguide and comprising two non-lateral surfaces on opposite sides of the projection that are connected by lateral surfaces of the projection.” Accordingly, for the same reasons discussed above in connection with claim 26, the liquid crystal displays covered by currently pending claim 43 are also consistent with the constructively-elected embodiments covered by previously pending claim 28.

Currently pending independent claim 63 also covers light source elements that include “at least one projection formed in at least one lateral surface of the light waveguide, the at least one projection extending over less than an entire length of the at least one lateral surface and comprising a light entry face arranged at an acute angle relative to a principal direction of extent of the waveguide” – that is, the projections recited in claim 63 include a subset of the features recited in claims 26 and 43. Thus, for the reasons discussed above, the light source elements covered by claim 63 are also consistent with the constructively elected species of previously pending claim 28.

Currently pending independent claim 67 covers light source elements that include “at least one projection formed in the *opposite* surface of the light waveguide, the at least one projection extending over less than the entire opposite surface [where] the at least one projection comprises a first surface covered by a reflector, and a second surface not

covered by a reflector and forming a light entry face.” As noted above, previously pending claim 28 covered light source elements with at least one triangular projection formed “in at least one of *at least one longitudinal surface* and the *opposite surface* of the light waveguide.” Claims 26, 43, and 63 recite light source elements where the projection (e.g., triangular projection A) is formed in a longitudinal surface. Claim 67 recites light source elements where the triangular projection is formed in the opposite surface of the waveguide. Thus, claims 26, 43, and 63 on one hand, and claim 67 on the other, merely represent two different types of embodiments that were covered by previously pending claim 28. As explained above in connection with claims 26, 43, and 63, the limitations of claim 67 are similar to those of previously pending claim 28, and therefore the light source elements covered by currently pending claim 67 are consistent with the constructively elected species of previous claim 28.

In view of the foregoing, Applicants respectfully request that claims 43, 44, 67, and 68 be reinstated in this application. Applicants believe that, as explained above, each of the independent claims is directed to a constructively-elected species, and should therefore be rejoined in this application.

Claim Rejections

Claims 26, 27, 31, and 59-61 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kalmanash (U.S. Patent No. 5,211,463, “Kalmanash”) in view of Tatsuaki et al. (EP 0 798 507, “Tatsuaki”) and Johnson et al. (U.S. Patent No. 6,439,731, “Johnson”). In particular, with regard to independent claim 26, the final office action alleges that Kalmanash discloses substantially all of the limitations of claim 26 (Action at pages 4-9), but relies on Tatsuaki to allegedly teach that “at least one of the light exit face and the opposite surface of the light waveguide comprise light-scattering sections and plane sections, and an area ratio of the plane sections to the light-scattering sections along the light waveguide is set such that a uniform luminance of the light source element is achieved” (Action at page 6). Further, the final office action relies on Johnson to allegedly teach “using semiconductor light-emitting diode light sources” (Action at page 8).

Applicants respectfully disagree with the rejection of independent claim 26. Claim 26 covers light source elements that include, in part, “at least one projection formed in at least one lateral surface of the light waveguide, the at least one projection extending over less than an entire length of the at least one lateral surface of the waveguide and comprising two non-lateral surfaces on opposite sides of the projection that are connected by lateral surfaces of the projection [where] the at least one projection comprises a first lateral surface of the projection that is covered by a reflector, and a second lateral surface of the projection that is not covered by a reflector and is arranged at an acute angle relative to a principal direction of extent of the light waveguide, forming a light entry face.” None of Kalmanash, Tatsuaki, or Johnson discloses or suggests such light source elements, for at least the following reasons.

First, none of Kalmanash, Tatsuaki, or Johnson disclose “at least one projection extending over less than an entire length of [a] lateral surface of the waveguide.” In fact, none of Kalmanash, Tatsuaki, or Johnson even discloses a projection as recited by claim 26. Applicants have been unable to find any disclosure relating to such features in any of Kalmanash, Tatsuaki, and Johnson.

With reference to Kalmanash, for example, Figures 6 and 7 instead show a block 86 that includes *recessed* ends 100 that admit light from sources 102 into block 86. Ends 100 are not the “at least one projection” recited by claim 26. With reference to Tatsuaki, for example, Figure 4 shows an exemplary light guide plate 21 that includes edges 41a-d. No projections are formed in any of edges 41a-d, and Tatsuaki provides no disclosure relating to the projections recited by claim 26. Johnson does not even include a waveguide. To the extent that Johnson’s diffuser panel 20 (e.g., see Figure 1 of Johnson) can be considered to form a waveguide (which Applicants dispute), diffuser panel 20 does not include projections formed in any lateral surfaces, and Johnson provides no disclosure relating to the projections recited by claim 26.

Second, none of Kalmanash, Tatsuaki, or Johnson disclose or suggest features corresponding to the claimed “at least one projection extending over less than an entire length of the at least one lateral surface of the waveguide,” as required by claim 26. Instead, as discussed above, each of Kalmanash, Tatsuaki, and Johnson discloses edge surfaces that do not include projections and extend along the entire length of the waveguide. For example, Kalmanash’s ends 100 extend along the length of block 86, while edges 41a-d extend along the length of Tatsuaki’s

light guide plate 21, and the edges of Johnson's diffuser panel 20 extend along the length of the panel. None of Kalmanash, Tatsuaki, and Johnson includes any disclosure relating to projections that extend over less than an entire length of a lateral surface of a waveguide.

Third, claim 26 requires that the at least one projection includes "two non-lateral surfaces on opposite sides of the projection that are connected by lateral surfaces of the projection," and further that the projection includes "a first lateral surface of the projection that is covered by a reflector, and a second lateral surface of the projection that is not covered by a reflector and is arranged at an acute angle relative to a principal direction of extent of the light waveguide." As explained above, surfaces H and I in Figure 1 above (e.g., the top and bottom surfaces of projection A) can correspond to the two non-lateral surfaces, and surfaces D and F can correspond to the lateral surfaces. As best Applicants understand, none of Kalmanash, Tatsuaki, or Johnson discloses or suggests structural features that correspond to the non-lateral surfaces and the first and second lateral surfaces of the projections recited in claim 26, and Applicants have been unable to find any reasonable interpretation of Kalmanash, Tatsuaki, or Johnson (or any combination thereof) that discloses or suggests these limitations.

Nonetheless, even if Kalmanash's ends 100 could at least be considered to form projections, which Applicants do not concede, Applicants submit that there is still no disclosure or suggestion in Kalmanash that relates to "at least one projection extending over less than an entire length of the at least one lateral surface of the waveguide," as required by claim 26. Moreover, there is no disclosure or suggestion in Kalmanash that relates to projections that include "two non-lateral surfaces on opposite sides of the projection that are connected by lateral surfaces of the projection," and that also include "a first lateral surface of the projection that is covered by a reflector, and a second lateral surface of the projection that is not covered by a reflector and is arranged at an acute angle relative to a principal direction of extent of the light waveguide," as required by claim 26.

Further, a person of skill in the art would have had no reason to modify the devices of Kalmanash or Tatsuaki to provide the light source elements of claim 26. Kalmanash's devices include extended light sources 102, which are tubular in shape (see Figures 6 and 7 of Kalmanash), positioned adjacent to edges 100. A person of skill in the art would not modify edges 100 to extend "over less than an entire length of the at least one lateral surface of the

waveguide,” as recited by claim 26, because doing so would reduce the amount of light that enters block 86 from light sources 102, thereby reducing the brightness of Kalmanash’s devices. Similarly, Tatsuaki’s devices include tubular light sources such as, for example, fluorescent light 22 shown in Figure 4. A person of skill in the art would not modify edges 41a-d of Tatsuaki’s light guide plate 21 to extend “over less than an entire length of the at least one lateral surface of the waveguide,” as recited by claim 26, because doing so would reduce the amount of light entering guide plate 21, thereby reducing the brightness of Tatsuaki’s devices. Accordingly, neither Kalmanash nor Tatsuaki, alone or in combination, discloses or suggests the light source elements covered by claim 26.

Moreover, claim 26 recites light source elements that include a light source “positioned in front of at least one light entry face, the light source being a semiconductor light-emitting diode.” The Action admits that neither Kalmanash nor Tatsuaki discloses such light sources, but alleges that Johnson teaches the use of semiconductor light-emitting diodes, and further alleges that it would have been obvious to a person of skill in the art to combine Johnson with Kalmanash and Tatsuaki to provide light source elements that include the claimed light sources (Action at pages 8-9). Applicants respectfully disagree, for at least the following reasons.

First, neither Kalmanash’s light block 86 nor Tatsuaki’s light guide plates (for example, light guide plate 21) are designed to accommodate light-emitting diode sources. For example, with respect to his display backlights, Kalmanash discloses the use of a “high brightness fluorescent backlight” (Kalmanash, col. 5, line 19) as his light source. The shapes of surfaces 100 and the extent of block 86 are designed to accommodate tubular light sources that extend along the length of block 86 (e.g., perpendicular to the plane of Figure 6). Surfaces 100 are shaped to allow tubular light sources to be mounted in proximity to block 86, and to direct rays emerging from such tubular light sources over a broad range of angles into block 86. The shape of block 86 – and surfaces 100 in particular – is not designed with a view to accommodating light-emitting diode sources.

Similarly, Tatsuaki discloses display backlights that include, for example, a “cylindrically shaped fluorescent light 22 at the edge of a substantially rectangular light guide plate 21” (Tatsuaki, page 5, lines 25-26) as shown in Figure 4. With respect to Figures 13-17, Tatsuaki discloses that “[t]he corners of edge 40b, which is between edges 41b and 41b, and edge 40a,

which is between edges 41a and 41d , are removed so that they do not stick out ... [and so] fluorescent light 62 can be installed with fixed gap 42 near edge 41, and the incident efficiency towards light guide plate 61 maintained at a high level" (Tatsuaki, page 10, lines 30-32). Therefore, the light sources disclosed by Tatsuaki are fluorescent lamps, and the modifications he makes to his light plates are expressly for the purpose of accommodating fluorescent lamps. Tatsuaki's light guide plates are not designed to accommodate light-emitting diode sources.

Thus, a person of skill in the art at the time of the invention would have had no reason to modify the teaching of Kalmanash and/or Tatsuaki to use light-emitting diode sources. As discussed above, the light blocks and light plates disclosed by Kalmanash and Tatsuaki are specifically designed to accommodate elongated, tube-shaped fluorescent sources. Light-emitting diode sources are not typically elongated and tube-shaped, and the shapes of the light blocks and light guide plates disclosed by Kalmanash and Tatsuaki are not optimized for such sources.

Furthermore, there would have been no motivation to combine Johnson with Kalmanash and Tatsuaki, at least because both Kalmanash and Tatsuaki disclose side-illumination of a light block or light guide plate, and Johnson expressly discourages side-illumination using light-emitting diodes. Johnson discloses that significant disadvantages arise from side-illumination of waveguides, even with light-emitting diodes, stating that "[t]hese attempts suffer the same limitation as light guides used with incandescent and fluorescent lamps: side lighting results in unacceptably dark area in the central portion of a large area display" (Johnson, col. 2, lines 47-50). Accordingly, Johnson uses backlighting of liquid crystal displays to overcome some of the performance limitations of side-illuminated display panels.

Given Johnson's teaching of the disadvantages of side-illumination of waveguides, a person of skill in the art would have had no reason to combine Johnson with Kalmanash and Tatsuaki, as the Examiner proposes.

In view of the foregoing, Applicants submit that claim 26 is patentable over Kalmanash, Tatsuaki, and Johnson, alone or in combination. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claim 26 under 35 U.S.C. § 103(a). Claims 27, 31, and 59-61 depend from claim 26, and are patentable over Kalmanash, Tatsuaki, and

Johnson for at least the same reasons. Therefore, reconsideration and withdrawal of the rejections of claims 27, 31, and 59-61 is also respectfully requested.

With regard to independent claim 43, which has been withdrawn from consideration in the final office action, Applicants have explained above that many of the limitations of claim 43 are similar to those of claim 26. As such, independent claim 43 is patentable over Kalmanash, Tatsuaki, and Johnson for at least the same reasons as independent claim 26. Applicants therefore respectfully request reinstatement of claim 43, in accordance with the discussion of Applicants' constructive election above, and allowance of claim 43.

Claims 62-66 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kalmanash in view of Tatsuaki and Johnson. In particular, the final office action alleges with regard to independent claim 63 that Kalmanash discloses substantially all of the limitations of claim 63 (Action at pages 21-26), but relies on Tatsuaki to allegedly teach that "at least one of the light exit face and the opposite surface of the light waveguide comprise light-scattering sections and plane sections, and an area ratio of the plane sections to the light-scattering sections along the light waveguide is set such that a uniform luminance of the light source element is achieved" (Action at page 23). Further, the final office action relies on Johnson to allegedly teach "using semiconductor light-emitting diode light sources" (Action at page 25).

Claim 63 has many limitations that are similar to the limitations of claims 26 and 43. As explained above, claims 26 and 43 are patentable over Kalmanash, Tatsuaki, and Johnson. In analogy with claims 26 and 43, claim 63 is also patentable over Kalmanash, Tatsuaki, and Johnson for several reasons. First, none of Kalmanash, Tatsuaki, or Johnson discloses or suggests "at least one projection formed in at least one lateral surface of the light waveguide," as required by amended claim 63. Applicants have been unable to find disclosure in any of these references that is consistent with all of the features of the at least one projection recited in claim 63.

Second, none of Kalmanash, Tatsuaki, or Johnson appears to disclose or suggest "at least one projection extending over less than an entire length of the at least one lateral surface," as required by claim 63. Instead, it appears that the most closely corresponding features of the

waveguides disclosed by Kalmanash, Tatsuaki, and Johnson (to the extent these references disclose waveguides) extend over an entire length of a lateral surface of the waveguides.

Third, claim 63 requires “a semiconductor light-emitting diode.” While neither Kalmanash nor Tatsuaki discloses the use of semiconductor light-emitting diodes, the final office action states that Johnson teaches the use of such diodes, and that it would have been obvious to combine Johnson with Kalmanash and Tatsuaki to provide this subject matter (Action at pages 25-26).

Applicants respectfully disagree with this statement. As discussed above in connection with claims 26 and 43, neither Kalmanash’s light blocks nor Tatsuaki’s light guide plates are adapted to accommodate light-emitting diode sources, and both Kalmanash and Tatsuaki make clear that their devices are adapted for use with extended tube-shaped light sources. Further, Johnson expressly teaches that side-illumination of waveguides – as taught by Kalmanash and Tatsuaki – has several disadvantages when compared with back-illumination. Accordingly, a person of skill in the art would have had no reason to modify Kalmanash’s light blocks or Tatsuaki’s light guide plates to accommodate semiconductor light-emitting diode sources, and a person of skill in the art would not have used the light-emitting diodes disclosed by Johnson for side-illumination in the devices of Kalmanash and Tatsuaki in view of Johnson’s teaching of the disadvantages of such illumination. Applicants therefore believe that none of Kalmanash, Tatsuaki, and Johnson, alone or in combination, disclose or suggest a “semiconductor light-emitting diode,” as required by claim 63.

Fourth, none of Kalmanash, Tatsuaki, or Johnson discloses or suggests a light entry face configured so that “a direction of maximum emission intensity of the semiconductor light-emitting diode is oriented at an oblique angle with respect to each of two principal directions of extent of the light waveguide, and parallel to a plane formed by at least one of the light exit surface and the opposite surface,” as required by claim 63. As discussed above, Kalmanash and Tatsuaki fail to disclose or suggest semiconductor light-emitting diode sources. As such, neither Kalmanash nor Tatsuaki appears to include any disclosure, explicit or implied, that relates to the orientation of a direction of maximum emission intensity of a light-emitting diode, or indeed to any light source. The tubular light sources disclosed by Kalmanash and Tatsuaki emit light in an approximately uniform distribution around their circumference. As such, there is no “direction

of maximum emission intensity” as recited by claim 63, and neither Kalmanash nor Tatsuaki can be fairly interpreted to provide any disclosure regarding a relationship between a direction of maximum emission intensity of a light source, the principal directions of extent of a waveguide, and the planes formed by the light exit surface and the opposite surface. Johnson does not cure the deficiencies of Kalmanash and Tatsuaki, at least because Johnson is silent regarding the orientation of a direction of maximum emission intensity of his semiconductor light-emitting diodes, and because it would not have been obvious to a person of skill in the art to combine Kalmanash and Tatsuaki with Johnson, as discussed above. Accordingly, Applicants believe that none of Kalmanash, Tatsuaki, and Johnson discloses or suggests light source elements for which “a direction of maximum emission intensity of the semiconductor light-emitting diode is oriented at an oblique angle with respect to each of two principal directions of extent of the light waveguide, and parallel to a plane formed by at least one of the light exit surface and the opposite surface,” as required by claim 63.

For all of the foregoing reasons, Applicants submit that claim 63 is patentable over Kalmanash, Tatsuaki, and Johnson, and respectfully request reconsideration and withdrawal of the rejection of claim 63 under 35 U.S.C. § 103(a).

Claim 62 depends from claim 26, and is patentable over Kalmanash, Tatsuaki, and Johnson for at least the same reasons. Accordingly, reconsideration and withdrawal of the rejection of claim 62 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 64 depends from claim 63, and is patentable over Kalmanash, Tatsuaki, and Johnson for at least the same reasons. Accordingly, reconsideration and withdrawal of the rejection of claim 64 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 65 depends from claim 43, and is patentable over Kalmanash, Tatsuaki, and Johnson for at least the same reasons. Accordingly, reconsideration and withdrawal of the rejection of claim 65 under 35 U.S.C. § 103(a) is respectfully requested.

Claim 67 has been withdrawn from consideration in the final office action, and covers light source elements that include “at least one projection formed in the opposite surface of the light waveguide, the at least one projection extending over less than the entire opposite surface ... [and comprising] a first surface covered by a reflector, and a second surface not covered by a reflector and forming a light entry face.” The at least one projection recited by claim 67 is

similar in many aspects to the at least one projection recited in claims 26, 43, and 63. Thus, claim 67 is patentable over Kalmanash, Tatsuaki, and Johnson, for many of the same reasons as claims 26, 43, and 63. Applicants therefore respectfully request reinstatement of claim 67, in accordance with the discussion of Applicants' constructive election above, and allowance of claim 67.

Sawayama (U.S. Patent No. 6,048,071, "Sawayama") was cited in the final office action with respect to a rejection of claim 28, where the final office action alleged that claim 28 was unpatentable under 35 U.S.C. § 103(a) over a combination of Kalmanash in view of Tatsuaki and Sawayama (Action at page 19). As shown, for example, in Figure 9 of Sawayama, Sawayama discloses liquid crystal display devices that include an angled light-conducting body 44.

However, Sawayama, either alone or in combination with one or more of Kalmanash, Tatsuaki, and Johnson, fails to disclose or suggest the light source elements and liquid crystal displays covered by claims 26, 43, 63, and 67, for at least the following reasons. First, claims 26, 43, and 63 require "at least one projection formed in at least one *lateral* surface of the light waveguide" (emphasis added). Sawayama does not disclose projections formed in lateral surfaces of waveguides. Instead, as shown in Figure 9 for example, Sawayama's light-conducting body 44 is formed in interface 48, which functions as a light exit surface for cell 10. There is no disclosure or suggestion in Sawayama that relates to forming a light-conducting body in a lateral surface of cell 10.

Second, Sawayama's light-conducting body 44 does not extend "over less than an entire length of the at least one lateral surface of the waveguide," as required by claims 26, 43, and 63, or "over less than the entire opposite surface" as required by claim 67. To the contrary, as discussed above, Sawayama's light-conducting body 44 does not extend over a lateral or opposite surface of cell 10 at all, but instead extends over a light exit surface of cell 10. Moreover, light-conducting body 44 extends over an *entire* length of the light exit surface of cell 10. Applicants have been able to find no disclosure or suggestion in Sawayama that relates to a light-conducting body that extends over less than an entire length of any surface of cell 10 (and in particular, a lateral or opposite surface of cell 10), and can find no reason to modify Sawayama in this regard, because such a light-conducting body would introduce less light intensity into Sawayama's liquid crystal cell, reducing its brightness.

Third, Sawayama's light-conducting body 44 does not include "a first lateral surface ... that is covered by a reflector" as required by claims 26, 43, and 63. Instead, as shown in Figure 9 of Sawayama, for example, neither surface 45, nor surface 43, nor any other surface of light-conducting block 44 includes reflectors. Furthermore, Sawayama provides no suggestion to cover either surface 45 or surface 43 with reflectors. If surface 45 was covered with a reflector, light from source 26 could not be coupled into light-conducting body 44. If surface 43 was covered with a reflector, light would not be able to exit cell 10. Thus, if either surface 45 or surface 43 was covered with a reflector, Sawayama's cell would no longer operate as he discloses.

Moreover, a person of skill in the art would have had no reason to combine Sawayama with Kalmanash and Tatsuaki. First, it is not at all clear, given the structures of Kalmanash's and Sawayama's waveguides, that these two references *can* be combined to yield the features of Kalmanash's waveguide with a light-conducting body of the type disclosed by Sawayama, for example. There is no indication in either Kalmanash or Sawayama of how such a combination could be made, and it is not obvious how to make such a combination given the very different modes of operation of the two waveguides.

In addition, it is not clear for what reason such a combination would be made. Applicants can find no disclosure in Kalmanash that suggests his waveguides can include light-conducting bodies similar to those disclosed by Sawayama. There does not appear to be any suggestion in Kalmanash that it would be of any advantage to include such bodies, or how such bodies could be added to his waveguides.

Second, even if Kalmanash and Sawayama were combined (along with Tatsuaki), which Applicants do not concede, the combination still would not cover the light source elements and liquid crystal displays of claims 26, 43, 63, and 67, at least because none of Kalmanash, Tatsuaki, and Sawayama discloses at least one projection "extending over less than an entire length of the at least one lateral surface of the waveguide" or "extending over less than the entire opposite surface." Therefore, Applicants submit that a person of skill in the art would have had no reason to combine Sawayama with Kalmanash and/or Tatsuaki, and even if such a combination occurred, the result still would not be the light source elements and liquid crystal displays covered by claims 26, 43, 63, and 67.

The final office action also suggested (see, e.g., Action at page 9) that Fukui et al. (U.S. Patent No. 5,986,727, “Fukui”) might be relevant to the patentability of the pending claims. Applicants have reviewed Fukui and believe the disclosure therein to be largely cumulative of the disclosure in Sawayama. Fukui does not cure the deficiencies of Kalmanash and Tatsuaki with regard to the claimed projections, and as with Sawayama, there appears to be no reason to combine Fukui with Kalmanash and Tatsuaki. Moreover, it does not even seem possible to combine these references given the markedly different structures of the waveguides, and even if the references were combined, the combination would apparently still not cover the light source elements and liquid crystal displays of claims 26, 43, 63, and 67, at least because none of Kalmanash, Tatsuaki, or Fukui discloses at least one projection “extending over less than an entire length of the at least one lateral surface of the waveguide” or “extending over less than the entire opposite surface.” Therefore, Applicants believe that Fukui does not have any particular relevance with regard to the patentability of the pending claims.

Applicants further note that claim 28 depends from claim 26, and is therefore patentable over Kalmanash, Tatsuaki, and Sawayama for at least the same reasons. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 28 under 35 U.S.C. § 103(a).

Claims 35 and 37 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kalmanash in view of Tatsuaki. Notwithstanding the additional limitations of these claims, Applicants note that claims 35 and 37 depend from claim 26, which is patentable over Kalmanash and Tatsuaki as explained above. Accordingly, claims 35 and 37 are each patentable over Kalmanash and Tatsuaki for at least the same reasons, and Applicants therefore respectfully request reconsideration and withdrawal of the rejections of these claims under 35 U.S.C. § 103(a).

Claims 32-34, 36, 40, and 41 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kalmanash in view of Tatsuaki and further in view of one of Tai et al. (U.S. Patent No. 6,092,904, “Tai”), Suzuki et al. (U.S. Patent No. 5,949,346, “Suzuki”), Akahane et al. (U.S. Patent No. 5,667,289, “Akahane”), and Waitl et al. (U.S. Patent No. 5,040,868, “Waitl”). Notwithstanding the additional limitations of these claims, Applicants note that each of claims 32-34, 36, 40, and 41 depends from claim 26, which is patentable over Kalmanash and Tatsuaki

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as explained above. None of Tai, Suzuki, Akahane, and Waitl cures the deficiencies of Kalmanash and Tatsuaki with respect to claim 26. Accordingly, claim 26 is patentable over Kalmanash, Tatsuaki, Tai, Suzuki, Akahane, and Waitl.

For at least the same reasons, each of claims 32-34, 36, 40, and 41 is also patentable over Kalmanash, Tatsuaki, Tai, Suzuki, Akahane, and Waitl. Accordingly, reconsideration and withdrawal of the rejections of each of claims 32-34, 36, 40, and 41 under 35 U.S.C. § 103(a) is respectfully requested.

In the final office action, claims 44 and 68 have been withdrawn. As explained above, however, each of these claims is directed to subject matter which is consistent with Applicants' constructively elected species. Thus, Applicants respectfully request reinstatement of each of claims 44 and 68. Claims 44 and 68 depend from claims 43 and 67, respectively, and are therefore patentable over Kalmanash, Tatsuaki, Johnson, and the other references of record for at least the same reasons as claims 43 and 67. Accordingly, allowance of claims 44 and 68 is respectfully requested.

In view of the foregoing, Applicants ask that the application be allowed.

Fees for the Petition for Extension of Time are being paid concurrently on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges to Deposit Account 06-1050, referencing Attorney Docket No. 12406-0126001.

Respectfully submitted,

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/Marc M. Wefers Reg. No. 56,842/
Marc M. Wefers
Reg. No. 56,842

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (877) 769-7945